

**IN THE CLAIMS:**

For the convenience of the Examiner, all pending claims of the present Application are shown below in numerical order whether or not an amendment has been made and applying the revised amendment practice of 37 CFR 1.121.

**Claims 1-39 (Canceled)**

40. **(Currently Amended)** A medical implant, comprising:  
a body configured to fit ~~precisely~~snugly into a sinus tarsi of a subtalar joint in a human foot, the body comprising:  
a first end having a first diameter;  
a second end having a second diameter;  
at least one continuous and uninterrupted thread including a crest with a substantially flat surface and having a substantially constant thread height and helically traversing a length of an exterior surface of the body, the length spanning from the first end to the second end;  
a recessed engagement in the first end; and wherein:  
a circumference of the exterior surface tapers from the first diameter to the second diameter along the length of the body.

41. **(Currently Amended)** The medical implant of Claim 41, wherein the circumference of the exterior surface tapers uniformly from the first end to the second end according to a predetermined taper angle; and  
the thread includes a leading flank inclined away from the second end and spanning from the crest to a thread root and a trailing flank inclined away from the first end and spanning from the crest to the thread root, the leading flank ~~separated from~~ and the trailing flank ~~by~~ defining a thread angle.

42. **(Previously Presented)** The medical implant of Claim 41, wherein the recessed engagement comprises:  
a hexagonal portion;  
a cylindrical portion; and  
a countersink portion.

43. **(Previously Presented)** The medical implant of Claim 41, wherein the taper angle measures between 15 degrees and 20 degrees.

44. **(Previously Presented)** A medical implant, comprising:  
a body adapted for implantation into a sinus tarsi of a subtalar joint in a human foot,  
the body comprising:  
a first end having a first diameter;  
a second end having a second diameter;  
at least one continuous and uninterrupted thread including a crest with a substantially  
flat surface and having a substantially constant thread height and helically traversing a length  
of an exterior surface of the body, the length spanning from the first end to the second end;  
a recessed engagement in the first end; and wherein:  
the recessed engagement comprises:  
a hexagonal portion;  
a cylindrical portion;  
a countersink portion;  
a circumference of the exterior surface tapers from the first diameter to the second  
diameter along the length of the body;  
wherein the taper angle is configured to alleviate pressure points between the body  
and a talus bone and the body and a calcaneus bone when the body is implanted into the sinus  
tarsi.

45. **(Canceled)**

46. **(Previously Presented)** The medical implant of Claim 41, wherein:  
the at least one thread has a substantially constant pitch;  
the at least one thread further includes a crest width;  
the ratio of the crest width to the thread height is at least 0.3;  
the thread angle measures approximately 60 degrees; and further comprising:  
a thread root width measuring between 0.020 inches and 0.040 inches.

47. **(Previously Presented)** The medical implant of Claim 41, wherein:  
the first end comprises a first flat face encircling the recessed engagement; and  
the second end comprises a second flat face encircling a bore.

48. **(Previously Presented)** The medical implant of Claim 41, wherein the at least one thread further includes a crest width and a substantially constant pitch, wherein the ratio of the crest width to the pitch is between 0.25 and 0.4.

49. **(Previously Presented)** The medical implant of Claim 41, wherein the at least one thread further includes a thread root width measuring between 0.020 inches and 0.040 inches.

50. **(Previously Presented)** The medical implant of Claim 41, wherein:  
the body is generally conical; and  
the circumference of the exterior surface comprises the crest of the thread.

51. **(Previously Presented)** The medical implant of Claim 41, wherein:  
the taper angle measures approximately 18 degrees;  
the thread height is approximately 0.032 inches;  
a root width of the thread is approximately 0.030 inches; and  
a pitch of the thread is approximately 0.090 inches.

52. **(Previously Presented)** The medical implant of Claim 41, wherein:  
the thread is configured to secure the body into the sinus tarsi, and to reduce or eliminate pain caused to a patient by the thread once the medical implant is inserted into the sinus tarsi;

the body is configured to:

reduce calcaneal eversion;  
at least partially prevent displacement of a talus without penetrating bone; and  
reduce or eliminate pain caused by localized pressure points between the body and one or more surrounding bones once the medical implant is inserted into the sinus tarsi.

53. **(Previously Presented)** The medical implant of Claim 41, wherein:  
the entirety of the medical device is adapted for insertion into the sinus tarsi and, once inserted is operable to alleviate pressure points between the body and a talus bone and the body and a calcaneus bone when the medical device is implanted into the sinus tarsi.

54. **(Previously Presented)** The medical implant of Claim 41, further comprising a bore coaxial with the recessed engagement and extending from the recessed engagement to the second end.

55. **(Currently Amended)** A method of forming a medical implant, comprising:  
configuring a body to fit ~~precisely snugly~~ into a sinus tarsi of a subtalar joint in a human foot, the body comprising:

a first end having a first diameter;

a second end having a second diameter;

forming at least one continuous and uninterrupted thread including a crest with a substantially flat surface and having a substantially constant thread height and helically traversing a length of an exterior surface of the body, the length spanning from the first end to the second end;

forming a recessed engagement in the first end; and wherein:

a circumference of the exterior surface tapers from the first diameter to the second diameter along the length of the body.

56. **(Currently Amended)** The method of Claim 55, wherein the circumference of the exterior surface tapers uniformly from the first end to the second end according to a predetermined taper angle; and

the thread includes a leading flank inclined away from the second end and spanning from the crest to a thread root and a trailing flank inclined away from the first end and spanning from the crest to the thread root, the leading flank ~~separated from~~ and the trailing flank ~~by~~ defining a constant thread angle.

57. **(Previously Presented)** The method of Claim 56, wherein the recessed engagement comprises:

a hexagonal portion;

a cylindrical portion; and

a countersink portion.

Claims 58 - 61 **(Canceled)**

62. **(Previously Presented)** The method of Claim 56, wherein:  
the first end comprises:  
a first flat face; and  
the second end comprises a second flat face.

63. **(Previously Presented)** The method of Claim 56, further comprising forming a bore coaxial with the recessed engagement and extending from the recessed engagement to the second end.

64. **(Canceled)**

65. **(Previously Presented)** The method of Claim 56, wherein the at least one thread further includes:  
the thread angle measuring approximately 60 degrees;  
a crest width, wherein the ratio of the crest width to the thread height is at least 0.3;  
and  
a thread root width measuring between 0.020 inches and 0.040 inches.

66. **(Previously Presented)** The method of Claim 56, wherein:  
the body is generally conical; and  
the circumference of the exterior surface comprises the crest of the thread.

67. **(Currently Amended)** A method, comprising:

inserting into the sinus tarsi:

a body configured to fit ~~precisely~~snugly into a sinus tarsi of a subtalar joint in a human foot, the body comprising:

a first end having a first diameter;

a second end having a second diameter;

a recessed engagement in the first end;

a bore coaxial with the recessed engagement and extending from the recessed engagement to the second end;

at least one continuous and uninterrupted thread including:

a crest with a substantially flat surface and having a substantially constant thread height and helically traversing a portion of the length of an exterior surface of the body, the length spanning from the first end to the second end; and

a leading flank inclined away from the second end and spanning from the crest to a thread root and a trailing flank inclined away from the first end and spanning from the crest to the thread root, the leading flank ~~separated from~~ and the trailing flank by defining a thread angle; and wherein

a circumference of the exterior surface tapers from the first diameter to the second diameter along the length of the body; and

the thread is configured to secure the body into the sinus tarsi, and to reduce or eliminate pain caused to a patient by the thread once the body is inserted into the sinus tarsi.

68. **(Previously Presented)** The method of Claim 67, wherein:

the circumference of the exterior surface tapers uniformly from the first end to the second end according to a first taper angle; the first taper angle defined by a second taper angle of the sinus tarsi of the second human foot.

69. **(Previously Presented)** The method of Claim 67, wherein the entirety of the medical device is inserted into the sinus tarsi.



70. **(Currently Amended)** A medical implant, comprising:
- a body configured to fit ~~precisely snugly~~ into a sinus tarsi of a subtalar joint in a human foot, the body comprising:
- a first end having a first diameter;
  - a second end having a second diameter;
  - a recessed engagement in the first end;
  - a bore coaxial with the recessed engagement and extending from the recessed engagement to the second end;
- at least one continuous and uninterrupted thread including:
- a crest with a substantially flat surface and having a substantially constant thread height and helically traversing a portion of the length of an exterior surface of the body, the length spanning from the first end to the second end; and
  - a leading flank inclined away from the second end and spanning from the crest to a thread root and a trailing flank inclined away from the first end and spanning from the crest to the thread root, the leading flank ~~separated from~~ and the trailing flank by defining a thread angle; and wherein
- a circumference of the exterior surface tapers from the first diameter to the second diameter along the length of the body; and
- the thread is configured to secure the body into the sinus tarsi, and to reduce or eliminate pain caused to a patient by the thread once the body is inserted into the sinus tarsi.